In[61]:=
```
ClearAll;


GaussJacobi[A_, b_, x0_, maxiter_] :=
 Module[{A1 = N[A], b1 = N[b], xk = x0, xnew, n, k = 0, OutputList},

 n = Length[b1];
 OutputList = {xk};

 While[k < maxiter,

  xnew = Table[
   (b1[[i]] - Sum[A1[[i, j]] * xk[[j]], {j, 1, n}] +
     A1[[i, i]] * xk[[i]]) / A1[[i, i]],
   {i, 1, n}
   ];

  AppendTo[OutputList, xnew];
  xk = xnew;
  k++;
  ];

 Print[
  NumberForm[
   TableForm[OutputList,
    TableHeadings → {None,
     Table[Subscript[x, i], {i, 1, n}]}],
   6]
  ];

 Print["No. of iterations performed: ", maxiter];
 ]



(* Example matrix and starting values *)
A = {{5, 1, 2}, {-3, 9, 4}, {1, 2, -7}};
b = {10, -14, -33};
x0 = {0, 0, 0};
```

```
GaussJacobi[A, b, x0, 15]
```

x_1	x_2	x_3
0	0	0
2.	-1.55556	4.71429
0.425397	-2.98413	4.55556
0.774603	-3.43845	3.92245
1.11871	-3.04067	3.84253
1.07112	-2.89044	4.00534
0.975953	-2.97867	4.04146
0.979148	-3.02644	4.00266
1.00422	-3.00813	3.98947
1.00584	-2.99391	3.99828
0.99947	-2.99729	4.00257
0.998428	-3.00132	4.0007
0.999985	-3.00083	3.9994
1.00041	-2.99974	3.99976
1.00004	-2.99976	4.00013
0.999898	-3.00004	4.00008

No. of iterations performed: 15